

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Amended) A method for transferring data between a host device and a storage medium via a buffer, comprising:
 - receiving from the host device a command to transfer data between the host device and the storage medium;
 - storing in a first register a value for tracking a number of sectors in the buffer available for storing data units;
 - storing in a second register a value corresponding to a number of data units to be transferred during an iteration of the transfer of the data between the host device and the storage medium;
 - transferring the number of the data units into the buffer from one of the host device and the storage medium responsive to the command;
 - modifying the value contained in the first register with the value stored in the second register in response to a completed iteration of the transfer of the data into the buffer;
 - transferring the number of the data units out of the buffer and to another of the host device and the storage medium; and
 - modifying the value contained in the first register in response to a transfer of the data units out of the buffer;
 - wherein, during the transfer of the data between the host device and the storage medium, the value contained in the first register corresponds to a number of data units currently stored in the buffer.
2. (Canceled)

3. (Previously Presented) The method of claim 1, wherein modifying the value contained in the first register with the value stored in the second register is accomplished by decrementing the value contained in the first register by the value stored in the second register.
4. (Previously Presented) The method of claim 1, further comprising:
storing in a third register an address representing a location in the buffer where data is being transferred between the buffer and the host device; and
storing in a fourth register an address representing a location in the buffer where data is being transferred between the buffer and the storage medium.
5. (Previously Presented) The method of claim 4, further comprising:
storing in a fifth register an address representing a beginning of the buffer; and
storing in a sixth register an address representing an end of the buffer.
6. (Previously Presented) The method of claim 5, further comprising:
storing in a seventh register a value representing a storage capacity of the buffer.
7. (Original) The method of claim 1, wherein the host device is a computer.
8. (Original) The method of claim 1, wherein the storage medium comprises non-volatile

semiconductor memory.

9. (Original) The method of claim 1, further comprising:
implementing the method via an application specific integrated circuit (ASIC).
10. (Previously Amended) A data transfer system for transferring data between a host device and a storage medium, comprising:
a host interface operative to receive from the host device a command to transfer data between the host device and the storage medium;
a buffer operative to temporarily store data that is transferred between the host device and the storage medium;
a first register operative to store a value for tracking a number of sectors in the buffer available for storing data units; and
a second register operative to store a value for modifying the value contained in the first register, the value stored in the second register corresponding to a number of data units to be transferred during an iteration of the transfer of the data between the host device and the storage medium;
wherein, in transferring the data between the host device and the storage medium, the value contained in the first register corresponds to a number of data units currently stored in the buffer.
11. (Previously Presented) The data transfer system of claim 10, wherein the data transfer system is configured to modify the value contained in the first register in response to a transfer of a data unit between the buffer and the host device.

12. (Previously Presented) The data transfer system of claim 11, wherein the data transfer system is configured to modify the value contained in the first register in response to a transfer of a data unit between the buffer and the storage medium.
13. (Canceled)
14. (Previously Presented) The data transfer system of claim 13, wherein the data transfer system is configured to decrement the value contained in the first register by 1 responsive to each data unit being transferred out of the buffer.
15. (Previously Presented) The data transfer system of claim 10, further comprising:
a third register that stores an address representing a location in the buffer where data is being transferred between the buffer and the host device; and
a fourth register that stores an address representing a location in the buffer where data is being transferred between the buffer and the storage medium.
16. (Previously Presented) The data transfer system of claim 15, further comprising:
a fifth register that stores an address representing a beginning of the buffer; and
a sixth register that stores an address representing an end of the buffer.
17. (Previously Presented) The data transfer system of claim 16, further comprising:
a seventh register that stores a value representing a storage capacity of the buffer.

18. (Original) The data transfer system of claim 10, wherein the data transfer system is an application specific integrated circuit (ASIC).

19. (Please Cancel) A method for transferring data between a host device and a storage medium via a buffer, comprising:

receiving from the host device a command to transfer data between the host device and the storage medium;

storing in a first register a value indicative of an amount of data that can be currently stored in the buffer;

incrementing the value contained in the first register by a value contained in a second register in response to an iteration of a data transfer into the buffer, the value in the second register corresponding to a number of data units to be transferred during the iteration of the transfer of the data between the host device and the storage medium; and

decrementing the value contained in the first register in response to a data transfer out of the buffer.

20. - 21. (Canceled)

22. (Please Cancel) An application specific integrated circuit (ASIC) for transferring data between a host device and a storage medium, comprising:

a buffer that temporarily stores data that is transferred between the host device and the storage medium;

a first register that stores a value corresponding to an amount of data that can be currently stored in the buffer; and

a second register that stores a value corresponding to a number of data units to be transferred to the buffer such that, responsive to the number of data units being transferred into the buffer, the value stored in the first register is incremented with the value contained in the second register;

wherein, in response to a data transfer out of the buffer, the value contained in the first register is decremented by a value corresponding to a number of data units transferred out of the buffer.

23. - 24. (Canceled)

25. (Previously Presented) The method of claim 3, wherein modifying the value contained in the first register in response to a transfer of a data unit out of the buffer comprises incrementing the value contained in the first register.

26. (Previously Presented) The method of claim 25, wherein incrementing comprises incrementing the value contained in the first register by 1 responsive to each data unit being transferred out of the buffer.